

REMARKS

These remarks are responsive to the Final Office Action mailed May 7, 2008, which sets a three-month shortened statutory period for response, to end August 7, 2008. These remarks are also responsive to the Advisory Action mailed September 4, 2008. Claims 1 – 2, 4 – 6, 8 – 10, 12, and 14 are pending and under consideration.

Reconsideration and withdrawal of the rejections made in the Final Office Action are respectfully requested in view of the following remarks.

Information Disclosure Statement

Applicants thank the Examiner for acknowledgement of receipt of the Information Disclosure Statement filed August 22, 2008 and for considering the information therein as indicated by the electronic signature and the initialed notation at the bottom of the Form PTO-1449.

Claim Rejections – 35 U.S.C. § 103

The Office Action rejects claims 1 – 2, 4 – 6, 10, and 14 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Okazaki et al. (U.S. Patent 6,495,862; hereinafter OKAZAKI) in view of Poicus et al. (U.S. Patent 6,987,613; hereinafter POICUS) and Babich et al. (U.S. Patent Application Publication 2005/0064322 A1; hereinafter BABICH).

The Office Action also rejects claims 8 – 9 and 12 under 35 U.S.C. § 103(a) as allegedly being unpatentable over OKAZAKI in view of POICUS and BABICH, and further in view of Holman et al. (U.S. Patent Application Publication 2004/0080938; hereinafter HOLMAN).

In particular, the Office Action states that OKAZAKI discloses a method of making an LED comprising: forming a transfer layer on at least a part of the transparent crystal substrate or light-emitting layer, softening or setting said transfer layer upon supplying an energy thereto, and forming a minute unevenness structure for preventing multiple reflection based on the minute unevenness structure transferred to the transfer layer. The Office Action further states that OKAZAKI does not expressly disclose pressing a mold formed with a minute unevenness structure against the transfer layer to transfer the minute unevenness structure to an outer surface of the transfer layer. For this missing feature the Office relies upon POICUS, which teaches a method comprising stamping a layer with a stamping block that has a pattern inverse to a pattern of an optical element.

The Office Action also states that OKAZAKI in view of POICUS do not expressly teach (a) a pressing pressure of mold being 5 MPa or higher and 150 MPa or lower, or (b) dry etching the transfer layer with a chlorine gas using the transfer layer as a resist mask to form the minute unevenness structure for preventing the multiple reflection in the transparent crystal substrate or the light-emitting layer. To account for the pressing at 5 MPa or higher and 150 MPa or lower, the Office Action states that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a pressing pressure of 5 MPa or higher and 150 MPa or lower in the method of Okazaki in view of Poicus, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233” (see Office Action dated May 7, 2008 at page 4, last full paragraph).

For forming a minute unevenness structure for preventing the multiple reflections comprising a step of dry etching a transfer layer with a chlorine gas using the transfer layer as a

resist mask to form the minute unevenness structure for preventing the multiple reflection in the transparent crystal substrate or the light-emitting layer, the Office relies on BABICH, which teaches that a first layer between a substrate and a second layer having an energy photoactive material is patternable by reactive ion etching in gas chemistry.

The Office Action as well as the Advisory Action mailed September 4, 2008, also state that Applicants' previous arguments have been found unpersuasive. With regard to the Office's failure to assert and/or provide factual evidence which reasonably shows that the pressure ranges utilized in the method of POICUS achieve a recognized result, the Examiner asserts at page 8, section 8 of the Office Action that

...it was well known in the art that a pressing pressure of a mold is one of parameters that determine a final structure of a resist in terms of pitch-to-pitch distances, height distributions, and regularities of the molded pattern in the resist. For instance, if the pressing pressure is too low, the molded pattern of the resist would have less sharpness than that of the mold. If the pressing pressure is too high, the resist would be at risk of damage.

With regard to Applicant's argument that POICUS teaches different stamping material, temperature, and pressure conditions from those of the instant claims, the Examiner asserts that the Final Office Action "established a sufficient reasoning of why a stamping pressure condition is a result-effective parameter to determine a final structure of a molded pattern, and thus subject to optimization." (see page 2, point 2 of the Advisory Action). The Examiner then cites new documents in the Advisory Action (Chou et al. "Nanoimprint Lithography" *J. Vac. Sci. Technol. B* 14(6):4129-4133, 1996 (hereinafter "CHOU"); and Hirai et al. "Study of the Resist Deformation in Nanoimprint Lithography" *J. Vac. Sci. Technol. B* 19(6):2811-2815, 2001 (hereinafter "HIRAI")) in further support of this assertion.

In response, Applicants respectfully submit that the instantly claimed methods are not anticipated or suggested by OKAZAKI either alone or in combination with POICUS and/or

BABICH and/or HOLMAN. Applicants further submit that neither CHOU nor HIRAI make up for the deficiencies of the OKAZAKI, POICUS, BABICH, and/or HOLMAN documents.

For the sake of brevity, Applicants refer the Examiner to the arguments made in the response filed August 7, 2008. In particular, Applicants submit that the present invention utilizes a silicon organic solvent to form a transfer layer, which is pressed with a mold under a pressure of 5 MPa or higher and 150 MPa or lower to transfer a minute unevenness structure. The ductile transition point of a silicon organic solvent is much smaller than that of silicon, e.g., 70 – 120°C in the case of PMMA. Thus, it would not have been obvious to one of ordinary skill in the art to combine the methods of OKAZAKI with those POICUS and/or BABICH at least because this difference in ductile transition temperatures would make use of the presently claimed pressure ranges practically impossible. Further reference to either CHOU or HIRAI does not render this point moot because the Office continues to rely upon the OKAZAKI, POICUS and/or BABICH documents as a basis for the rejection of the claims under 35 U.S.C. § 103(a), and as stated above, neither the teachings of CHOU nor HIRAI make up for this deficiency.

Moreover, so that the record is complete, neither CHOU nor HIRAI is formally used in a rejection of record.

Based at least on the foregoing, Applicants submit that POICUS, OKAZAKI, BABICH, HOLMAN, CHOU and/or HIRAI, either alone or in any properly reasoned combination, do not disclose or suggest at least the claimed combination of elements. Accordingly, Applicants respectfully submit that the rejections under 35 U.S.C. 103(a) should be withdrawn.

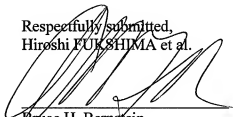
Conclusion

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejection of record, and allow all the pending claims.

No additional fee is believed due at this time. If, however, any fee is necessary to ensure consideration of the submitted materials, the Patent and Trademark Office is hereby authorized to charge the same to Deposit Account No. 19-0089.

Should there be any questions, the Examiner is invited to contact the undersigned at the below listed telephone number.

Respectfully submitted,
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